



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

SAFETY EVALUATION REPORT
OF THE FIRST TEN-YEAR INTERVAL INSERVICE INSPECTION
REQUEST FOR RELIEF NO. 90-02
FOR
DUKE POWER COMPANY
MCGUIRE NUCLEAR STATION, UNIT 1
DOCKET NUMBER: 50-369

1.0 INTRODUCTION

The Technical Specifications for McGuire Nuclear Station, Unit 1, state that the surveillance requirements for Inservice Inspection and Testing of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). In 10 CFR 50.55a(a)(3)(i) it is stated that alternatives to the requirements of paragraph (g) may be used if the proposed alternatives would provide an acceptable level of quality or safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the component. The regulations require that inservice examination of components and system pressure tests conducted during the first ten-year interval comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) on the date twelve months prior to the date of issuance of the operating license, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for the McGuire Nuclear Station, Unit 1, first ten-year inservice inspection (ISI) interval is the 1980 Edition, through Winter 1980 Addenda. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for his facility, information shall be submitted to the Commission in support of that determination and a request made for relief from the ASME Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(a)(3)(i), the Director of the Office of Nuclear Reactor Regulation may authorize proposed

alternatives to 10 CFR 50.55a(g) when the proposed alternatives would provide an acceptable level of quality and safety. Under 10 CFR 50.55a(g)(6)(ii), the Commission may require the licensee to follow an augmented inservice inspection program for systems and components which the Commission deems that added assurance of structural reliability is necessary.

By letter dated November 19, 1990 as revised July 13, 1991 and October 2, 1991, Duke Power Company submitted Relief Request No. 90-02, which requested relief from the limits on the one-year extension of the ten-year inservice inspection interval requirements of subparagraph IWA-2400(c).

2.0 EVALUATION

The staff has evaluated the information provided by the licensee in support of Relief Request No. 90-02 as follows.

Request for Relief No. 90-02, Subarticle IWA-2400, Inspection Intervals

Code Requirement: Subparagraph IWA-2400(c), states that: "Each inspection interval may be decreased or extended (but not cumulatively) by as much as 1 year. For power units that are out of service continuously for 6 months or more, the inspection interval during which the outage occurred may be extended for a period equivalent to the outage."

Licensee's Request for Relief: The licensee requests that four weeks be added to the ten-year inservice inspection interval in addition to the twelve-month extension allowed by the ASME Code. This relief would apply to Class 2 and Class 3 portions of systems and components identified in the McGuire Unit 1 inservice inspection program which have not been hydrostatically tested as required for the first interval.

Licensee's Basis for Requesting Relief: When the original inservice inspection plan for McGuire Nuclear Station was developed in the early 1980 time frame, it was assumed that there would be ten refueling outages during the initial ten-year interval for Unit 1. Accordingly, the required hydrostatic testing of all systems and components was scheduled in such a manner to assure that testing was completed by the tenth refueling outage.

Midway through this ten-year interval, the cycle lengths for operation of Unit 1 were increased from twelve to eighteen months. As a result of this change, the actual number of refueling outages during this ten-year interval was reduced by three. As such, there would be only seven refueling outages during the first ten-year interval to complete all of the required hydrostatic tests instead of the original planned ten refueling outages.

McGuire Unit 1 has recently completed its end-of-cycle 7 refueling outage. The end-of-cycle 8 refueling outage for Unit 1 is currently scheduled to begin December 11, 1992, which is outside of the additional twelve-month extension allowed by the ASME Code. The current ten-year inservice inspection interval ends on December 1, 1991. As allowed by the ASME Code, the ten-year interval can be extended an additional one year (twelve months) to December 1, 1992. As currently scheduled, the end-of-cycle 8 refueling outage would begin after the extended ten-year inservice inspection interval expires. The licensee's request to add four weeks to the ten-year interval plus the one year extension allowed by the Code will ensure that McGuire Unit 1 can operate until December 12, 1992, the start of end-of-cycle 8 refueling outage. The four week extension will also provide a contingency period in the event of unforeseen extensions of the outage schedule.

McGuire Unit 1 has completed 90% of the outage related Class C (3) hydrostatic tests to date. In addition, approximately 50% of Class B (2) hydrostatic tests are complete. During the end-of-cycle 8 refueling outage, the remainder of the hydrostatic tests will be completed.

Licensee's Proposed Alternatives: None. The required examinations will be performed. The only change will be the time the examinations will be performed.

Staff Evaluation: At McGuire to date, all inservice and functional inspections have revealed no evidence of failed welds in pressure retaining piping systems. The staff believes that the planned extension of an eleven year interval as allowed by the Code for an additional 28 days (12 to comply with the present planned schedule plus 16 for unplanned contingencies) has no effect on the level of quality and safety for the 50% portion of the Class B (2) systems and components which are to be hydrostatically tested during refueling outage 8. The testing to date of all of the remaining systems and components would have revealed the presence of any serious degrading mechanism.

Although not stated by the licensee, there is a premise for granting this relief since approximately 99% of the hydrostatic tests of Class A (1) systems (and portions thereof which are subjected to hydrotest pressure during tests of Class B (2) systems) and components have been completed to date.

3.0 CONCLUSION

Pursuant to 10 CFR 50.55a(g)(5)(iii), the Licensee determined that conformance with certain Code requirements is impractical for his facility and submitted supporting information. The staff concludes by 10 CFR 50.55a(g)(6)(i) that an extension of the Code-allowed eleven-year inservice inspection interval for an additional 28 days is authorized by law and will not endanger life, property, or the common defense and security, and is otherwise in the public interest. The relief granted does not apply to Class A (1) components or systems.

4.0 RECOMMENDATIONS

The licensee should note that the end date of the second ten-year interval has not been changed by either the code-allowed extension of one year or by the granting of the requested relief for the first ten-year interval. The required inspections of the second ten-year interval will have to be accomplished in a shorter time frame than the first interval, and as the fuel cycle is longer, in fewer refueling outages. The rate of inspections will be considerably greater. With the added service time accumulated during the second ten-year interval, the extension of the second interval for the same bases that the first interval was extended would not be prudent because of increased wear, erosion, etc, without extensive justification.

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Dated: January 30, 1992